Faulting in this area is associated more with the individual mountain ranges and depositional troughs than with the vast regional Cordilleran fold and thrust belt.

In the eastern half of the Dillon Quadrangle the three principal uplifts, Ruby Range, Greenhorn Range, and the southwestern part of the Tobacco Root Mountains consist of Pre-Cambrian Archean rocks believed to be nonprospective for hydrocarbons.

..., Pennsylvanian Amsden and Quadrant rocks, and Permian Phosphoria beds, totaling over 2,000 feet (Perry, 1988), in addition to older Paleozoics.

The remainder of the Beaverhead River Basin is in the frontal fold and thrust belt and can be divided into a number of areas, each of which has been influenced by significant local events. The southeast portion of the Pioneer Batholith fills the northwest corner of the Dillon Quadrangle. The south end of McCartney Mountain occurs in T. 4 S., Rs. 8 and 9 W. These intrusions are not considered prospective for oil or gas. Between them is a Tertiary covered area that connects northward to the Divide Basin. Although metamorphosed on the flanks of the intrusions there should be an area several miles wide that could be prospective in Ts. 4 and 5 S., R. 8 and 9 W. A well in sec. 27, T. 5 S., R. 9 W. found PreðCambrian at 11,840 feet after drilling an apparently unfaulted sedimentary section from Cretaceous Colorado Group through Cambrian. A significant porosity zone was encountered in the lower Quadrant at 6,370 to 6,393 feet which tested 4,110 feet of water. A fracture zone in the Devonian Jefferson yielded 2,950 feet of water and another fracture (?) in the Cambrian Meagher tested 8,495 feet of water. There appears to be source beds in the Permian Phosphoria and the Devonian Sappington member of the Three Forks Formation.

The remainder of this quadrangle is classified as "LOW" development potential except for the Pre-Cambrian mountain ranges. Of course, a significant oil or gas show in the "LOW" rated area would require a re-evaluation.

The Pre-Cambrian mountain ranges are classified as "VERY LOW" development potential.